DOCUMENT RESUME

ED 099 118 PS 007 588

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TITLE The Developmental Influences and Educational Implications of Two Differing Pre-Nursery School Programs.
PUB DATE Apr 73
NOTE 11p.; Paper presented at the Annual Meeting of the Western Psychological Association (Anaheim, California, April 1973)

EDRS PRICE MF-$0.75 HC-$1.50 PLUS POSTAGE
DESCRIPTORS Behavior Rating Scales; *Early Childhood Education; Educational Environment; *Experimental Programs; Family Day Care; *Home Programs; Home Visits; Paraprofessional School Personnel; Peer Relationship; *Play; *Social Development; Social Relations; Student Teacher Relationship

ABSTRACT

The purpose of this study of social development was to begin to assess the effects of an early, continuing group educational/child care experience on basically family-reared children. Two experimental groups and one control group of young children were involved. In the "long-term" experimental group, five children (mean C.A.=16 months) met one afternoon per week in a home setting under the care of a paraprofessional. In the "intensive" experimental group, five other children (mean C.A.=25 months) met three afternoons per week under the care of a professional preschool teacher and one paraprofessional aide. At 34 months, 8 of these 10 children entered the same nursery class with control children. At 40 months, data on all these children were collected according to a Social Participation Scale (noting type of play, conversations, response to peer and adult approaches, expressions of hostility, etc.). Results suggest that the subjects with early educational experiences exhibited more advanced social behavior than the control subjects, and that "long-term" program subjects exhibited more advances in social behavior than "intensive" program subjects. Findings suggest that (1) paraprofessionals can be effective in early education programs; (2) home settings can be functional environments for such programs; and (3) early educational contacts need not be massive to produce results. (Author/ED)

NOV. 1 4 1974

THE DEVELOPMENTAL INFLUENCES AND EDUCATIONAL IMPLICATIONS OF TWO DIFFERING PRE-NURSERY SCHOOL PROGRAMS[1]

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Recently, there has been continually increasing interest expressed by educators, psychologists and involved layment in very early educational and/or group care experiences, and in the possible developmental influences of such experiences - especially in the general areas of cognitive and social development. Of the two areas, some attention has been focused upon assessing the cognitive effects of early educational experiences, while very little empirical evidence has been gathered concerning the social developmental results of early educational experience.

The evidence that is available is primarily indirect and derived from the studies of the Kibbutizim, or from the few twin and other sibling studies. The results of these studies suggest that social and emotional development is influenced by early group experiences, following a somewhat different course for group-raised than for family-raised children, and resulting in differential later social needs, dependent upon primary social relationships within the family. However, there is little direct information available concerning the generalizability of these findings to other cultural groups, or to less comprehensive, or less immediate, group educational and/or care situations. Consequently, the study reported here was undertaken as an initial step in assessing the specific social developmental affects of an early, continuing group educational/child care experience upon basically family-reared children.

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Methodology

Subjects

The children upon whom this study focused were eight three year olds (Mean C.A. = 3.30. σ = .121) enrolled in a university laboratory nursery school. Each of the subjects in the experimental group was provided with very early group educational experience in one of two differing situations (to be described below).

A control group was chosen from other children enrolled in the same nursery school class, who had had no regular or continuing pre-nursery school group-care and/or educational experience. The control group subjects were matched to those in the experimental group for sex and, as closely as possible, for age (Mean C.A. = 3.22, σ = .248; t = 1.73, df = 6, p @ .15).

Early Education Programs

The long-term program. Situation A, or the "long-term" program, began when the experimental subjects were an average age of 16 months. At this time, three females and two males began to meet one afternoon a week (three to five hours per session) under the care of a para-professional "teacher/care-taker" (supervised by a developmental psychologist). All subjects were from upper middle class, professional, suburban families, and were chosen on the basis of parental desire for such an experience, ease of arranging weekly sessions, and the probability of stable, non-mobile families.

The weekly Situation A sessions took place in a home setting, to which were added additional blocks, simple craft and art materials, simple puzzles, books, an indoor toddler's climbing apparatus, dress-up clothes and miscellaneous dolls and "educational" toys. The sessions varied in content, attempting to follow the apparent and expressed needs of the children, but focused upon exploration and discovery, communication, joint activities, and rudimentary inter-personal dynamics.

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The intensive program. Situation B, or the "intensive" program, began nine months later for five other subjects (Mean C.A. = 25 months). At this time, five females began to meet three afternoons a week (approximately three hours per session) under the tutelage of a professional pre-school teacher and one para-professional aide. The subjects were from familial backgrounds comparable to those of the subjects in Situation A, and were enrolled primarily due to parental desire for such an experience. The sessions took place in a regular "nursery school" setting and were similar in content to the Situation A sessions.

Both programs ended when the subjects' mean chronological age was 31 months. Despite the fact that Situation A continued for 14 months (summer vacations briefly interrupted the program), while Situation B continued for only six months, the total number of hours of contrast was essentially equivalent for the two programs (situation A = 208 hours; Situation B = 216 hours).

Post-program experience. Three months after the culmination of the two programs, at a mean chronological age of 34 months, eight of the experimental subjects entered the same class at the university laboratory nursery school. (One male from Situation A was enrolled in another nursery school; one female from Situation B moved to a distant city.) A total of eighteen children were enrolled in the nursery school class, with one head teacher, two full-time assistant teachers, and a number of part-time student teacher-aides. The program at the school is flexibly individually oriented, and has much the same general content and focus as the two early education programs.

Data Collection

In order to assess the social development and interaction of the subjects, a Social Participation Scale was developed[3] which noted such behavioral items as type of play, brief and extended conversations, response to peer and adult approaches,

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expressions of hostility, etc. (overall scale inter-rater reliability = 90.57%). Using time intervals of 30 seconds, a trained observer recorded the frequency of occurance of the twenty social behavioral items during non-teacher directed, "free" play. Twelve time/event samples of five minutes duration each were collected for each of the experimental and control group subjects. In so far as possible, order of observation was randomized among all subjects, although an attempt was made to complete one set of time/event samples for all subjects before beginning another set.

The data were collected when the subjects were a mean chronological age of 40 months.

Analyses were concerned results both with comparisons of the combined early experience groups (Situations A + B) to the no experience group (control), and with comparisons of Situation A subjects to Situation B subjects. In general, the results suggest that the subjects wtih early educational experience exhibited more advanced social behavior than did the control subjects, and that the Situation A ("long-term" program) subjects exhibited more advanced social behavior in most dimensions than did Situation B ("Intensive" program) subjects.

Early Education versus No Experience Groups

The combined early education group seems to have very different social behavior and development than the no experience group. Comparatively, the early education subjects play in a more social, interactive and advanced manner, converse with peers more frequently, initiate more cooperative play, and show a greater degree of involvement with peers than with adults. When they do interact with adults, it is on a more independent level, with less attention-and approval-seeking behavior, and more positive responsiveness to adult approaches, and more conversational initiations. Overall, they display proportionately more interactive, as compared to non-interactive, behaviors than do the subjects with no early educational experience.

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Of the specific findings, perhaps one of the most interesting is that concerned with types of play. The distribution of percentages of total play time spent in the various types of play shifts rather dramatically (x^2 = 100.28, df = 5, $p \ll .001$) toward more interactive and advanced play on the part of the early education subjects. For example, a smaller proportion of total play time is spent at all levels of non-social play (unoccupied, solitary and onlooker) by the experimental group than by the control group ($\sim$ = .30, $p \ll .001$). The reverse is true for all levels of social play (parallel, associative, and cooperative), at which the experimental group spent proportionately more time than did the control group ($\sim$ = .45, $p \ll .001$). While, as would be expected from previous studies, the preponderance of play time of both groups is spent in solitary, onlooker and parallel play, there is a significantly greater amount of the unexpected, more mature types of play (associative: $\sim$ = .25, $p \ll .001$; cooperative: $\sim$ = .10, $p \ll .01$) in the experimental group. It is clear that as a group, the early education subjects spent more of their play time engaged in advanced, interactive levels of play than did the control subjects who had not had such experience.

Results on other variable measured show similar differences between the groups. The experimental subjects engaged in a considerably greater number of conversations with their peers than did the control subjects (x^2 = 5.50, df = 1, $p \leq .02$), although most of these conversations were brief conversations (defined as one or several word verbalizations initiated by the observed child). In terms of initiatory behaviors, experimental subjects initiated a higher proportion of the adult-child verbal contacts in which they engaged ($\sim$ = .11, $p < .01$), and a greater proportion of the cooperative play in which they were involved ($\sim$ = .45, $p < .05$). The experimental subjects also showed greater positive responsiveness to adult approaches ($\sim$ = .25, p = .05), and a greater range of responsive behaviors

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with peers (x^2 = 3.58, df = 1, p @ .06).

Finally, considering all the behaviors observed, a difference in overall interactive behavior (e.g., social types of play, initiated and responsive conversations, etc.) can be seen between the two groups. Primarily this difference stems from the greater percentage of total behaviors that were interactive in the experimental group, and the greater percentage of behaviors that wer interactive in the experimental group, and the greater percentage of behaviors that were non-interactive in the control group (x^2 = 85.00, df = 2, p<< .001). However, an additional determinant of this difference in over-all interactive behavior was the greater involvement with peers, as compared to that with adults, in the experimental group (x^2 = 9.63, df = 1, p < .01). Further, there was a strong tendency for the adult interactions of the control group to be of an attention-getting or approval-seeking nature (x^2 = 3.60. df = 1, p @ .06), while no such tendency was noted for the experimental group. Taken together, these findings suggest more vigorous, more mature, and less adult-dependent interactive pattern on the part of the experimental subjects.

Situation A versus Situation B

The differences between the experimental and control groups seem to be highlighted when the two sub-groups of the experimental group are compared. In many cases, a large proportion of the variance between the two major groups is contributed by the behaviors of the Situation A subjects. In comparison to the Situation B subjects, the Situation A subjects are more social and advanced in play, more conversant with their peers, more likely to display initiative and more verbally responsive.

The significance of the contribution of the Situation A subjects to the over-all differences found can be seen clearly in the differences apparent between the two sub-groups at specific levels of play. At the two extremes of the progression of play types, the Situation A subjects showed significantly different amounts of

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play time, spending a smaller amount of time engaged in the least mature type of play ($\curvearrowright$ = .10, p = .05) and a larger percentage of time engaged in the most mature type of play ($\curvearrowright$ = .18, p @ .001). When only the social types of play are considered, it can be seen that the Situation A subjects spent proportionately more time in the more advanced levels of social play ($\curvearrowright$ = .08, p = .05), while the Situation B subjects spend proportionately more time in the less mature types of social play ($\curvearrowright$ = .08, p = .05). In other words, the pattern of play of these two sub-groups suggests more advanced social behavior at crucial levels of play types for the Situation A subjects.

The findings for other variables measured are consistent with those for play behaviors. In terms of communicative behavior, the total number of conversations of the Situation A subjects exceeds that of the Situation B subjects (x^2 = 7.50 df = 1, p < .01), with the difference primarily a result of peer conversations (x^2 = 8.74, di = 1, p < .01). Not only did these subjects engage in a greater number of brief conversations wtih peers, they also initiated and responded to a considerably greater number of extended conversations (x^2 = 14.78, df = 1, p < .001). Indeed, most of the extended conversations observed for the experimental group were a result of behaviors on the part of the Situation A subjects.

Other findings suggest that the Situation A subjects initiate more peer interactions of all types than do the Situation B subjects. Not only did the Situation A subjects initiate more cooperative play than did the Situation B subjects (x^2 = 9.96, df = 1, p = .01), but they also initiated all of the hostile behavior observed (as well as the one instance of ignoring a hostile approach). In addition, Situation A subjects differ in overall mode of response (x^2 = 5.66, df = 1, p = .02), with a greater percentage of their total responses being verbal than are those of Situation B subjects.

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Conclusions

Although the groups of children involved in this pilot study are very small, so that a number of possibly effecting variable are necessarily uncontrolled, several tentative conclusions seem warranted.

First, the study provides further evidence on the general question of the effects and importance of early experiences for human development. Once, again, a positive, enriching, broadening experience has apparently facilitated development, and has done so without coercing, training, or "teaching" the children. Rather it provided an environment which allowed and encouraged the children to actively experience, and, thereby, to expand and develop.

Second, the long-term, continuous program seemed to enhance early social development to a greater extent than did the short-term intensive program. This finding which is consistent with those of most "compensatory education" programs for older aged children, suggests the importance of beginning educational experiences very early and continuing them consistently over a relatively long period of time.

In this context, it seems possible that the toddler through early pre-school years may form a "critical period" in human social development, when basic understandings of group relationships and the functioning of one's self within a group are most easily acquired. Certainly this possibility, along with its relationship to the individualism and independence valued by this culture, seems fertile ground for exploration.

Pragmatically, there are suggestions in the findings that para-professional "teacher/care-takers" can be very effective in early education programs, and that home settings can be functional environments for such programs. The findings also suggest that early educational contacts need not be massive to produce results. This set of implications suggests a possible model for early infact educational/care experiences...several small group situations, similar to the

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long-term program, could be established under the direction of a single trained para-professional "teacher/care-taker", each group meeting on a different day of the week in the home of the children, with the "teacher/care-takers" additional time devoted to the home visits which other researchers have found to be so effective.

Further research is now underway which will assess the constancy of the social developmental effects noted, and test for any possible associated cognitive effects. If the results of this second phase of the study yield differences between the experimental groups and the control group that are of the magnitude and strength found in the phase of the study reported here, a larger, more controlled, and therefore more definitive, investigation is planned.

FOOTNOTES

[1]Presented at the Western Psychological Association Convention, Anaheim, California, April 1973.

[2]The author wishes to express appreciation to Dr. Malcolm P. Douglass, Director of the Claremont Center for Developmental Studies in Education for permission to conduct observations at the Mary B. Eyre Children's School, and Ms. Charlene Keller, Associate Director of the Mary B. Eyre Children's School, and Ms. Sharon Hawkins Cockroft for so ably leading the early education programs; to Signs Larralde and Sheryl Moinet for assistance in the initial stages of scale development; and to Gladys Jane Frankel for extremely competent observations and data organization.

[3]Based in part upon a more restricted scale developed in conjunction with Lori Siemens Peterson for her unpublished senior thesis, "A Study of the Relationship between Self-concept and Social Participation Behavior in Very Young Children," Scripps College, 1971.